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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,214	07/15/2003	Min-Seon Kim	1349.1270	7079
21171	7590	07/26/2004	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			CHEN, SOPHIA S	
			ART UNIT	PAPER NUMBER
			2852	

DATE MAILED: 07/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/619,214

Applicant(s)

KIM, MIN-SEON

Examiner

Sophia S. Chen

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39-44, 46-53 and 56-62 is/are rejected.
- 7) ☒ Claim(s) 45, 54 and 55 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/15/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because the reference character "RF" shown in Figure 2 should be labeled as "R_F". Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: R₃ (Figure 1). Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing

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sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 39-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Uchida et al. (JP 05-249777)

Uchida et al. discloses a consumable product unit (cartridge) 2 being removably mounted in an electrophotographic image forming apparatus 1, comprising: a consumable product (developer; paragraph [0023]) to use in image forming; a first determination element R1 determining a type of the consumable product (abstract and paragraph [0018]); a second determination element D determining whether the consumable product is a new consumable product (abstract and paragraph [0026]); the first determination element R1 is a first resistor having a predetermined first resistance value (paragraph [0036]) and the second determination element (fuse) D is a second resistor having a predetermined second resistance value (0 Ω ; paragraph 0032]), the

predetermined first resistance value being higher than the predetermined second resistance value; the second resistor D is a fusible resistor, which melts to disconnect when an over-current is supplied (paragraphs [0032] and [0033]); the predetermined first resistance value varies according to a manufacturer of the consumable product and/or the type of the consumable product (abstract and paragraph [0029]); and the consumable product is a cartridge 2 having one predetermined color developer (Figure 2).

5. Claims 46-53 and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Uchida et al.

Uchida et al. discloses a consumable product replacement sensing system 21 employed in an electrophotographic image forming apparatus 1, comprising: one or more consumable product units 2 removably mountable in a body of the electrophotographic image forming apparatus 1, to determine a type of a consumable product used in image forming; a consumable product replacement sensing apparatus 21 in which the one or more consumable units 2 are mounted, the consumable product replacement sensing apparatus 21 determining the type of the consumable product which is employed in a respective consumable product unit 2 (paragraph [0026]); the consumable product unit 2 comprises a first determination element R1 determining the type of the consumable product (abstract and paragraph [0018]); a second determination element D determining whether a respective mounted consumable product is a new consumable product (abstract and paragraph [0026]); the first determination element R1 is a first resistor having a predetermined first resistance value

(paragraph [0036]) and the second determination element (fuse) D is a second resistor having a predetermined second resistance value (0 Ω ; paragraph 0032)), the predetermined first resistance value being higher than the predetermined second resistance value; the second resistor D is a fusible resistor, which melts to disconnect when an over-current is supplied (paragraphs [0032] and [0033]); the predetermined first resistance value varies according to a manufacturer of the consumable product and/or the type of the consumable product (abstract and paragraph [0029]); the consumable product replacement sensing apparatus 21 having a new product determining signal generating unit 23 generating a level of electrical potential corresponding to at least one of the first and second determination elements R1 and D, an engine control unit 23 determining the type of the consumable product by the level of the electric potential corresponding to the first determination element R1, and an over-current supplying unit 22 supplying an over-current to disconnect the second determination element D (abstract; paragraphs [0028] to [0033]; Figure 1); the engine control unit 23 determines that the consumable product is the new consumable product if the level of electrical potential generated at the new product determining signal generating unit 23 is a first electrical potential level which corresponds to the first and second determination elements R1 and D, and determines that the consumable product is an old consumable product if the level of electrical potential generated at the new product determining signal generating unit 23 is a second electrical potential level which corresponds to the first determination element R1, wherein, if a respective consumable product is determined to be the new consumable product, the engine control unit 23

controls the over-current supplying unit 22 to disconnect the second determination element D of a corresponding and new consumable product unit (abstract and paragraphs [0028] to [0038]); and the consumable product comprises a cartridge 2 containing one or more predetermined color developers, the one or more consumable product units 2 each being provided with a respective one of the consumable products comprises a developing device that develops an image by using one or more color developers supplied from the consumable product 2, and the consumable product replacement sensing apparatus 21 is provided in an image forming apparatus (terminals 24a and 24b) that forms the image developed by the developing device on a paper (Figures 1 and 2).

6. Claims 58-61 are rejected under 35 U.S.C. 102(b) as being anticipated by Uchida et al.

Uchida et al. discloses a consumable product replacement sensing method comprising: mounting one or more consumable product units 2 in a consumable product replacement sensing apparatus 21, each of the consumable product units 2 being formed such that a type thereof is determinable by the consumable product replacement sensing apparatus 21 (Figure 1); when each of the consumable product units 2 is mounted, determining whether a respective consumable product 2 is a consumable product usable in the consumable product replacement sensing apparatus 21 (paragraphs [0026], [0037], and [0038]); the mounting one or more consumable product units 2 comprises determining whether the one or more mounted consumable products 2 are one or more new consumable products 2, respectively, by electrically connecting

a respective consumable product unit 2 having first and second determination elements R1 and D to the image forming apparatus 1, the first determination element R1 to determine usability of the consumable product 2 and the second determination element D to determine whether the consumable product 2 is a new consumable product 2 (abstract and paragraphs [0028] to [0038]); generating a level of electrical potential corresponding to at least one of the first and second determination elements R1 and D; determining whether the consumable product 2 is the new consumable product by the level of electrical potential; and when the consumable product 2 is determined to be old, determined by the level of electrical potential corresponding to the first determination element R1 whether the consumable product 2 is usable (abstract and paragraphs [0028] to [0038]); if the consumable product is determined to be the new consumable product 2, the determining of whether the consumable product 2 is the new consumable product 2 further comprises: supplying an over-current to the second determination element D to disconnect the second determination element D by melting a fusible resistor (abstract and paragraphs [0032] and [0033]); and varying a resistance value of the first determination element R1 according to one or more of a manufacturer of the consumable product 2, a type of the consumable product 2 and a color of the consumable product provided in the respective consumable product unit 2 (paragraph [0044]).

7. Claim 62 is rejected under 35 U.S.C. 102(b) as being anticipated by Uchida et al.

Uchida et al. discloses a sensing system 21 comprising: a consumable unit 2 including parallel resistive elements R1 and D (Figure 1); and a sensing apparatus to

recognize the consumable unit 2 comprising: a signal generating portion 23 to generate a signal corresponding to a parallel composite resistance value of the consumable unit 2 connected to the signal generation portion 23, a disconnecting portion 22 to selectively and permanently disconnect a respective one of the parallel resistive elements D of the consumable unit 2, and a controller 23 to control the disconnecting portion 22 to disconnect the respective one of the parallel resistive elements D and to compare a level of the signal that is generated from the signal generating portion 23, after the respective one of the parallel resistive elements D is disconnected, with predetermined standard levels to determine whether the consumable unit 2 is usable in a system and/or to determine a manufacturer of the consumable unit 2 using the sensing apparatus 21 (abstract and paragraphs [0028] to [0038]).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 46-53, 56, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. (JP 08-262832) in view of Uchida et al.

Hayashi et al. discloses a consumable product replacement sensing system comprising: one or more consumable product units 4Y, 4M, 4C, and 4BK; a consumable product replacement sensing apparatus 17 determining the type of the consumable product (abstract and Figure 3); a first determination element 15a-15d determining the

type of the consumable product (abstract); and the light quantity of the first determination element 15a-15d varies according to a color of the consumable product provided in the respective consumable product unit 4Y, 4M, 4C, and 4BK (abstract).

Hayashi et al. differs from the instant claimed invention in not disclosing the first determination element being first resistor, a second determination element determining whether the consumable product is a new consumable product; and the associated mechanism.

Uchida et al. discloses a consumable product replacement sensing system 21 employed in an electrophotographic image forming apparatus 1, comprising: one or more consumable product units 2 removably mountable in a body of the electrophotographic image forming apparatus 1, to determine a type of a consumable product used in image forming; a consumable product replacement sensing apparatus 21 in which the one or more consumable units 2 are mounted, the consumable product replacement sensing apparatus 21 determining the type of the consumable product which is employed in a respective consumable product unit 2 (paragraph [0026]); the consumable product unit 2 comprises a first determination element R1 determining the type of the consumable product (abstract and paragraph [0018]); a second determination element D determining whether a respective mounted consumable product is a new consumable product (abstract and paragraph [0026]); the first determination element R1 is a first resistor having a predetermined first resistance value (paragraph [0036]) and the second determination element (fuse) D is a second resistor having a predetermined second resistance value (0 Ω ; paragraph 0032], the

predetermined first resistance value being higher than the predetermined second resistance value; the second resistor D is a fusible resistor, which melts to disconnect when an over-current is supplied (paragraphs [0032] and [0033]); the predetermined first resistance value varies according to a manufacturer of the consumable product and/or the type of the consumable product (abstract and paragraph [0029]); the consumable product replacement sensing apparatus 21 having a new product determining signal generating unit 23 generating a level of electrical potential corresponding to at least one of the first and second determination elements R1 and D, an engine control unit 23 determining the type of the consumable product by the level of the electric potential corresponding to the first determination element R1, and an over-current supplying unit 22 supplying an over-current to disconnect the second determination element D (abstract; paragraphs [0028] to [0033]; Figure 1); the engine control unit 23 determines that the consumable product is the new consumable product if the level of electrical potential generated at the new product determining signal generating unit 23 is a first electrical potential level which corresponds to the first and second determination elements R1 and D, and determines that the consumable product is an old consumable product if the level of electrical potential generated at the new product determining signal generating unit 23 is a second electrical potential level which corresponds to the first determination element R1, wherein, if a respective consumable product is determined to be the new consumable product, the engine control unit 23 controls the over-current supplying unit 22 to disconnect the second determination element D of a corresponding and new consumable product unit (abstract and

paragraphs [0028] to [0038]); and the consumable product comprises a cartridge 2 containing one or more predetermined color developers, the one or more consumable product units 2 each being provided with a respective one of the consumable products comprises a developing device that develops an image by using one or more color developers supplied from the consumable product 2, and the consumable product replacement sensing apparatus 21 is provided in an image forming apparatus (terminals 24a and 24b) that forms the image developed by the developing device on a paper (Figures 1 and 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the first determination element, second determination element, and the associated mechanism as taught by Uchida et al. in place of the sensing apparatus of Hayashi et al. to prevent a cartridge from being erroneously attached in the case of exchanging the cartridge and to recognize the kind of a cartridge with an element for detecting a new cartridge in the cartridge (Uchida et al.; abstract).

By combining Hayashi et al. and Uchida et al., the first resistor obviously varies according to a color of the consumable product provided in the respective consumable product unit.

Allowable Subject Matter

10. Claims 45, 54, and 55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Prior Art

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Iwaki et al. (US Pat. Pub. No. US 2002/0003966 A1) discloses a consumable product replacement sensing system comprising means for determining whether the replaceable unit is new or used.

Hayakawa (US Pat. Pub. No. US 2002/0164168 A1) discloses an image forming apparatus comprising means for determining the kind of cartridge and means for determining whether the cartridge is new or used.

Mitamura (US Pat. Pub. No. US 2003/0107783 A1) discloses an image forming apparatus comprising new/old detector; replaceable units; and each replaceable unit comprising fuse resistor.

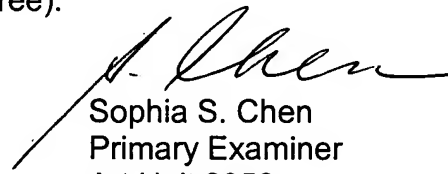
Oshiumi (JP 05-061393) discloses a drum unit being removably mounted in an image forming apparatus, comprising means for supplying excess current to a fuse resistor when it is judged that the drum unit is the new one.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sophia S. Chen whose telephone number is (703) 308-7617. The examiner can normally be reached on M-F (7:00-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (703) 308-1373. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sophia S. Chen
Primary Examiner
Art Unit 2852

Ssc
July 20, 2004